

REMARKS/ARGUMENTS

Claims 8-17 are pending in the present application. Claims 8-17 stand rejected under 35 U.S.C. § 103(a). It is respectfully submitted that all of the presently pending claims are allowable for at least the following reasons.

Initially, applicants respectfully request that the finality of the rejection be withdrawn as being premature. Specifically, applicants note that a new ground of rejection is introduced by the Examiner in the most recent office action, specifically an obviousness rejection that includes a new reference, Cryptography and Network Security by William Stallings (the Cryptography reference). The addition of the Cryptography reference was neither necessitated by the amendment of the applicants in the most recent office action nor based on information submitted in an information disclosure statement filed during the period set forth in 37 C.F.R. 1.97(c). M.P.E.P. §706.07(a). Therefore, applicants respectfully submit that the finality of the most recent office action is improper and request that the finality of the rejection be withdrawn as premature.

35 U.S.C. § 103(a)

Claims 8-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent No. 5,485,520 to Chaum et al. (the Chaum reference) in view of the Cryptography reference. Applicants respectfully submit that claims 8-17 are in condition for allowance for at least the following reasons.

In order for a claim to be rejected for obviousness under 35 U.S.C. § 103(a), not only must the prior art **teach or suggest each element of the claim**, but the prior art must also **suggest combining the elements in the manner contemplated by the claim**. See Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 934 (Fed. Cir. 1990), cert. denied, 111 S. Ct. 296 (1990); In re Bond, 910 F.2d 831, 834 (Fed. Cir. 1990). The Examiner bears the initial burden of establishing a *prima facie* case of obviousness. M.P.E.P. §2142. To establish a *prima facie* case of obviousness, the Examiner must show, *inter alia*, that there is some **suggestion or motivation**, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, **to modify or combine the references** and that, when so modified or combined, the prior art **teaches or suggests all of the claim limitations**.

M.P.E.P. §2143. Applicants respectfully submit that these criteria for obviousness are not met here.

The present invention relates to performing a posting to a mobile integrated circuit card, with the help of a terminal which has a secure wireless communication with a computer. (Specification, page 1, ll. 1-4). Referring to Fig. 1, in one example embodiment, a roadside computer station 1 communicates with a moving vehicle 3 via a radio beacon 2. (Specification, page 6, ll. 7-8). The moving vehicle 3 is equipt with an on-board terminal OBU whose fee credit is stored on an integrated circuit card ICC. (Specification, page 6, ll. 9-11). When driving through a particular communication range, the road toll is to be deducted from the credit on IC card ICC, i.e., posted to the credit account of IC card ICC. (Specification, page 6, ll. 13-16).

In the example embodiment, the communication sequence between the various devices is as follows. An initiation signal is transmitted via radio beacon 2. (Specification, page 6, ll. 18-19). In response thereto, the terminal OBU generates a service request signal. (Specification, page 6, ll. 18-20). The radio beacon 2 then generates a debit order signal which is received by terminal OBU, and then transmitted by terminal OBU to IC card ICC as a debit command. (Specification, page 6, ll. 20-22). After the debit posting has been performed, the IC card ICC generates a receipt acknowledgment signal, which is transmitted from terminal OBU to radio beacon 2 on the basis of an initiation signal of radio beacon 2. (Specification, page 6, ll. 22-25). Proper receipt of the acknowledgment signal is then confirmed (acknowledged) by radio beacon 2, whereupon terminal OBU transmits the acknowledgment signal to the IC card to complete a transaction record, and the IC card ICC makes the information available for the next service request by terminal OBU. (Specification, page 6, ll. 26-31).

The time-critical part of the communication sequence is from the creation of the debit order by the radio beacon 2 until transmission of the acknowledgment signal to terminal OBU. (Specification, page 6, ll. 33-35). This communication, which is susceptible to interference, is executed within an extremely short period of time according to the present invention, due to the fact that a MACRO signal is relayed from terminal OBU to IC card ICC according to Figure 2. (Specification, page 6, line 37 - page 7, line 4). The MACRO signal contains a selection signal for application APPL (posting), a posting triggering signal CMD,

posting amount B, its own signature S1 and a randomly generated number R2.
(Specification, page 7, ll. 4-7). Furthermore, the MACRO signal may also contain a provisional transaction data record L for creating log book information in IC card ICC.
(Specification, page 7, ll. 7-9). Transaction data record L and posting amount B together form a posting data record. (Specification, page 7, ll. 10-11).

Claim 8 recites a particular exchange of information between the terminal and the intelligent storage device, and a particular use of the exchanged information. Before an interrupt-sensitive time period, a first data word (e.g., R1) is transmitted from the intelligent storage device (e.g., ICC) to the terminal (e.g., OBU). During the interrupt-sensitive time period, a signal is transmitted from the terminal to the intelligent storage device which includes not only an identifier (e.g., S1) generated as a function of the first data word (e.g., R1), but also a posting trigger signal (e.g., CMD), a posting data record (e.g., L, B), and a second data word (e.g., R2) which is generated by either the computer or the terminal. The intelligent storage device checks the identifier (e.g., S1), posts the data record (e.g., L, B) and generates a further identifier (e.g., S2) using the second data word (e.g., R2). A confirmation signal and the further identifier (e.g., S2) are then transmitted by the intelligent storage device (e.g., ICC) to the terminal (e.g., OBU).

Claim 8 includes the element of, before an interrupt-sensitive time period, transmitting a first data word of the at least one data word from the intelligent storage device to the terminal. The first data word is generated for a mutual dynamic authenticity test. Furthermore, claim 8 includes the element of, during the interrupt-sensitive time period, transmitting a particular signal from the terminal to the intelligent storage device. The particular signal according to claim 8 includes a posting triggering signal, a posting data record, an identifier generated using the first data word and a second data word of the at least one data word generated by one of the computer and the terminal.

The Office Action cites various sections of the Chaum reference as disclosing the feature of transmitting a particular signal from the terminal to the intelligent storage device, however none of the cited sections disclose a particular signal including all of the listed elements being transmitted from a terminal to an intelligent storage device. The Chaum reference apparently discloses only one transmission to a smart card, pursuant to figure 5 of the Chaum reference. The content of the transmission to the smart card shown in figure 5 is

apparently limited to "Digits 0(); Charge Station ID; Time." Pursuant to the Chaum reference, apparently digits 0[] represents "the amount of the computed toll charges, the charge station identity, the time of the transaction, etc." (Chaum; col. 16, ll. 47-49). None of these elements may be considered an identifier which is generated using a first data word. In particular, the amount of the computed toll charge is not unique to the transaction, as vehicles of the same type may be charged the same amount, possibly depending on their point of entry to the highway. The charge station identity does not change from transaction to transaction, and therefore also does not serve the function of an identifier. Finally, the time is not useful for performing an authenticity test since a third party to the transaction can easily determine the time and therefore disrupt the transaction.

Furthermore, even if time, or some other element, was able to be used as the identifier, which is respectfully not conceded, according to claim 8 the identifier is generated using a first data word. Claim 8 recites that the first data word is for performing a mutual dynamic authenticity test between the computer, the terminal and the intelligent storage device and is transmitted, before the interrupt-sensitive period, from the storage device to the terminal. The signal apparently transmitted in the Chaum reference to the smart card therefore cannot disclose, or even suggest, the identifier of the present application since it is not generated from a data word that is transmitted from the smart card. Therefore, the Chaum reference does not disclose, or even suggest, the transmission during the interrupt-sensitive time period according to claim 8.

The Final Office Action's response to the preceding argument cites a section of the Chaum reference that apparently shows an identifier being transmitted from an IVU (in-vehicle unit) to an RCS (roadside collection service). (Chaum; col. 3, ll. 17-24). Though the IVU apparently includes a smart card (Chaum; col. 4, line 40), there is no indication that the communication cited in the Final Office Action is from the smart card to an IVU. As recited in claim 8, the first data word is transmitted before an interrupt-sensitive time period from the intelligent storage device to the terminal. The Chaum reference gives no suggestion that a first data word is transmitted from a smart card at any time. Though the cited section of the Chaum reference indicates that the "IVU prepares an initial 'commit' data package which already includes a portion of an anonymous cryptographically untraceable electronic check" (Chaum; col. 3, ll. 10 - 13), there is no indication that this untraceable electronic check is

transmitted from the smart card to the IVU. In fact, as shown in figure 5 of the Chaum reference, no transmissions from the smart card to any other element occurs during the “pre-commit” or “commit” stages. The Final Office Action cites figure 5 of the Chaum reference as showing that the smart card is bi-directional by indicating the uplink and downlink arrows on the top of figure 5. However, these arrows only show the general direction of the uplink and downlink, whereas the specific data flows are shown with accompanying arrows in the body of figure 5.

Furthermore, whether the Chaum reference discloses, or even suggests, a first data word being transmitted from a smart card to an IVU (which is respectfully not conceded for the reasons discussed above), there is still no indication that a particular signal, including among other things an identifier generated using a first data word, is transmitted from a terminal to an intelligent storage device during an interrupt-sensitive time period. The communication from an IVU to an RCS cited in the Final Office Action does not disclose, or even suggest, the feature of claim 8 of transmitting, during the interrupt-sensitive time period a particular signal including an identifier, from a terminal to an intelligent storage device.

Additionally, the Chaum reference apparently discusses a “spoof proof” being transmitted from the roadside collection station RCS to the inter-vehicle unit IVU. However, there is no mention of any “spoof proof” being transmitted from the IVU to the smart card. Furthermore, figure 5 confirms that the “spoof proof” is not transmitted to the smart card. Therefore, it is respectfully submitted that the “spoof proof” of the Chaum reference does not disclose, or even suggest, an identifier generated from a first data word or a second data word being transmitted in a particular signal from a terminal to a intelligent storage device.

Therefore, it is respectfully submitted that the Chaum reference does not disclose, or even suggest, transmitting to an intelligent storage device a particular signal including a posting triggering signal, a posting data record, an identifier generated using the first data word and a second data word of the at least one data word generated by one of the computer and the terminal. Accordingly, the Chaum reference does not anticipate claim 8.

Claims 9-17 depend from claim 8 and are therefore allowable for at least the same reasons as claim 8 is allowable.

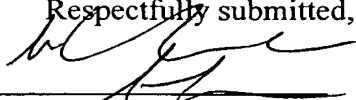
For at least the reasons discussed above, withdrawal of the rejection under 35 U.S.C. §103(a) with respect to claims 8-17 is hereby respectfully requested.

Appl. No.09/202,783
Reply to Office Action of May 19, 2003

CONCLUSION

Applicants respectfully submit that all of the pending claims of the present application are now in condition for allowance. Prompt reconsideration and allowance of the present application are therefore earnestly solicited.

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